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The Journal of Cutaneous Diseases

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THE JOURNAL OF CUTANEOUS DISEASES
INCLUDING SYPHILIS

Copyright, 1908, *by The Grafton Press.* *Published monthly by The Grafton Press, 70 Fifth Avenue; F. H. Hitchcock, Pres., 70 Fifth Ave., T. B. Hitchcock, Secy., 70 Fifth Ave., New York. Entered January 20, 1903, at New York, N. Y., as second-class matter, under Act of Congress, March 3, 1879.*

Subscriptions and all business communications should be addressed to The Grafton Press, 70 Fifth Avenue.

Communications relating to the editorial department, exchanges, and books for review, should be addressed to A. D. MEWBORN, M.D., EDITOR, 50 West Thirty-seventh Street, New York.

CONTENTS

ORIGINAL COMMUNICATIONS

Modern Dermatological Pathology as Related to Practical Therapeutics. M. B. Hartzell, M. D. 485

Modern Dermatological Pathology and its Relation to Therapeutics. Charles J. White, M. D. 490

Syphilis in its Relation to General Paralysis of the Insane. Andrew P. Biddle, M. D.. 512

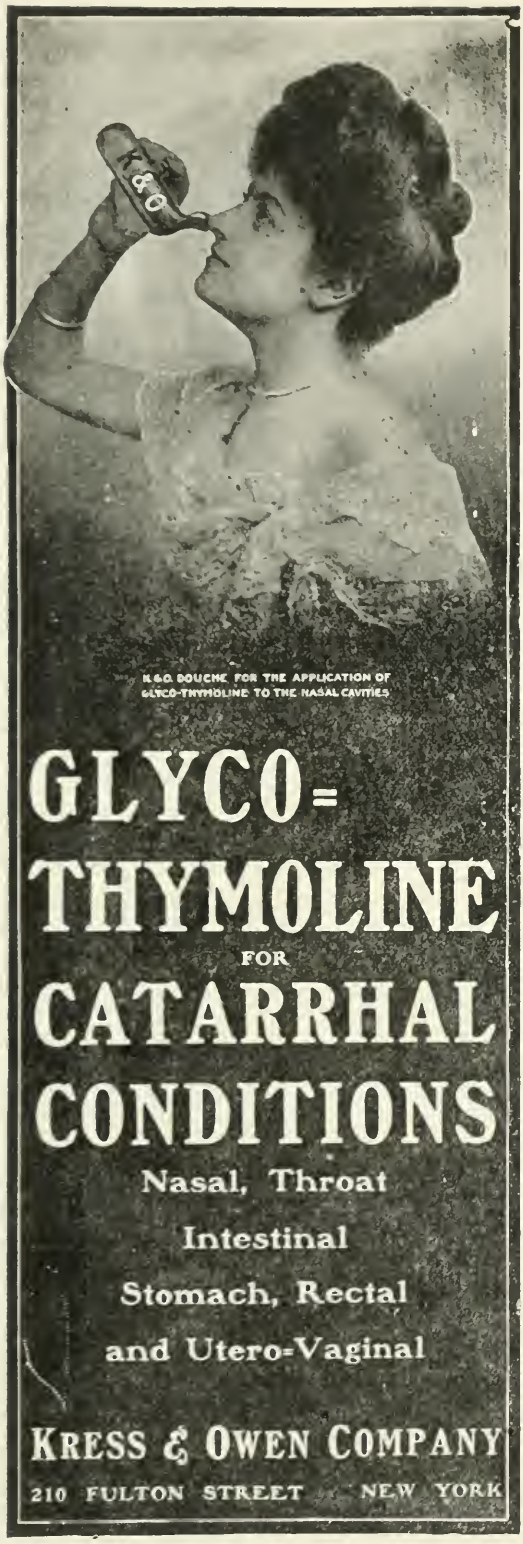
Another Case of Hyponomoderma (Larva Migrans) Demonstrating the Immediate Curative Effect of Chloroform Injected in Situ. M. B. Hutchins, M. D. 521

Blastomycosis Cutis: Report of two cases. M. B. Hutchins, M. D. 523

SOCIETY TRANSACTIONS

Manhattan Dermatological Society (February) 526
Chancre of the lower lip.—Pityriasis rosea limited to the pelvic region.—Lupus erythematosus of the face showing beneficial results from Finsen therapy.—Keratoma hereditarium plantare et palmare (two cases).—Bromoderma verrucosum.

Manhattan Dermatological Society (March) 528
Epithelioma of lip and rodent ulcer of the cheek.—Lepra tuberosa.—Lichen planus et verruca planum coexisting in the same case.—Erythema induratum scrophulosorum (Erytheme indure Bazin).—Circinate syphilide in a colored woman.



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THE JOURNAL OF CUTANEOUS DISEASES

VOL. XXVI NOVEMBER, 1908 NO. 11

MODERN DERMATOLOGICAL PATHOLOGY AS RELATED TO PRACTICAL THERAPEUTICS*

By M. B. Hartzell, M. D., Philadelphia

At first glance it would seem extremely easy to define the relationship existing between the treatment of disease and pathology. It would appear that a fairly complete and accurate knowledge of the nature, causes and results of disease must of necessity precede its intelligent and successful treatment. But even a superficial acquaintance with the history of Medicine immediately reveals the erroneousness of such a view. It is possible to understand thoroughly the nature of any given malady, to know accurately the causes which produce it, to be familiar with its results, to even possess agents which destroy the cause, and yet be unable to materially influence its course. On the other hand, we may be in complete ignorance of or have entirely erroneous ideas about the pathology of a disease and yet be able to treat it with entire success. Cinchona was successfully employed for two hundred years or more before we really knew anything of the nature and causes of the malarial fevers, and the same may be said with equal truthfulness about the use of mercury in syphilis. If Medicine, and more especially Therapeutics, were an exact science based upon well-defined and fixed laws the relationship between pathology and therapeutics would probably be equally well defined and fixed. But I need not remind this audience that, almost without exception, our most valued and effective remedies, the few specifics which we possess, are almost entirely empirical, their use resting, at least for a long period after their discovery, upon no scientific basis and often employed in disease about whose pathology the most erroneous ideas prevailed. Of course, what is true of general medicine is equally true of the special branches of it. Many diseases of the skin were treated with more or less success long before their pathology was

* Read before the 32d Annual Meeting of the American Dermatological Association, Annapolis, September 25, 1908.

even studied, and in many instances our pathological knowledge has brought no change in the methods of treatment employed.

It is an extremely suggestive fact that in dermatology as in general medicine, while theories as to the nature and etiology of many affections have undergone frequent change during a long period of years, in a not inconsiderable number the treatment has remained unaltered, showing that successful or at least satisfactory management of these diseases has been arrived at without the aid of pathology.

While there can be no doubt that our knowledge of the pathology of the skin has been increased enormously during the past quarter of a century, we are apt to lose sight of the fact that this increase has taken place in certain directions much more than in others. We have learned much about the histo-pathology of the skin, thanks to the great advances which have been made in microscopic technique. We know more of the intimate nature of the changes resulting from disease in the skin than ever before; indeed, our knowledge in some directions may be said to be fairly complete in this respect, but when we come to the etiology of cutaneous maladies the most important part of pathology, there is quite another and far less brilliant story to be told. Here the lacunæ in our knowledge are painfully frequent and great, although we are beginning to close some of these too.

I know of no better way to learn how much and in what way modern pathology has influenced the treatment of cutaneous diseases than to briefly review side by side the pathology and treatment of a few of the more important diseases of the skin as taught to-day in the most recent treatises upon dermatology. But here we at once meet with a serious difficulty in the existence of decided differences of opinion among authors as to many questions of pathology. But it is worthy of note that however great their differences about pathology they are practically of one mind as to treatment.

The three principal theories as to the nature of eczema are: 1st, the neuropathic theory which regards the nervous system as playing the chief rôle in the production of inflammation of the skin; 2nd, the theory that it is due to the invasion and growth of parasites, the toxic products of which acting as irritants cause an inflammatory reaction in the skin; 3rd, the theory that it is a dermatitis arising from the absorption of toxins of some sort, usually from the gastro-intestinal canal, that is, that it is a toxæmia. The first of these theories seems to have exerted but little influence upon the treatment

of eczema either because its adherents did not have the courage of their convictions, or because remedies which act upon the skin through the intermediation of the nervous system satisfactorily are few. Whatever the real reason remedies directed towards the nervous system play a very insignificant rôle in the modern treatment of eczema. The second or parasitic theory, on the other hand, has exerted and still exerts a very great influence, more especially upon the local treatment of this affection. There is a very decided tendency to use such local remedies as are known to destroy or inhibit the growth of microörganisms, and the good effects of many of the older local remedies are at the present day attributed to their parasiticide powers. Whether this use of parasiticides has always been advantageous this is not the time nor the place to discuss. The toxæmic theory, which is in fact a very old one in a modern dress, has long influenced the constitutional treatment of certain forms of eczema, more particularly the chronic forms involving the greater portion of the cutaneous surface, characterized by many relapses, and it is likely to exert a still greater effect as our knowledge of toxins of one kind and another increases, since we are beginning to learn that these have a very important share in the production of many general as well as local affections.

Upon the whole, I think we may say that the treatment of eczema has been decidedly influenced by modern pathological conceptions, more particularly the local treatment, as shown in the greatly increased use of such agents as are known to be parasiticides.

Psoriasis and lichen planus are striking illustrations of the fact that disease may be successfully treated, though we may be without any definite knowledge of its real nature and causes. The treatment of these two maladies is entirely independent of any of the various theories held as to their pathology. We treat psoriasis to-day practically as it was treated one hundred years ago. We give arsenic internally because we have learned by experience that it will at least cause the temporary disappearance of the eruption, but how it does so, or why, we are in complete ignorance, and the same may be said with equal truth about lichen planus.

During the past quarter of a century our knowledge of the entire group of tuberculous affections of the skin has been enormously amplified in all directions, and our knowledge of many of the members of the group is singularly complete. The infectious character of the diseases comprising it is firmly established, their histopathology is well determined, the infecting agent is definitely known;

and yet this knowledge has thus far been almost completely barren of results in making treatment more successful. The treatment of lupus vulgaris, which may be taken as a type of the group, is essentially the same as it was a century ago. We do not cure the disease, we destroy the tissue affected by it, and this not because we do not have remedies which destroy the bacillus, the active cause of the malady, but because we have not yet learned how to use these without at the same time destroying the tissues in which the bacillus multiplies. In other words, its successful treatment depends not one whit upon our pathological knowledge.

The group of vegetable parasitic diseases presents a much more agreeable picture. Here pathology and therapeutics go hand in hand, but even in this group successful treatment did not wait upon pathology since these affections were cured long before there was any real knowledge of their nature.

These few examples will, I think, sufficiently illustrate how little modern pathology has actually influenced the treatment of diseases of the skin. We employ much the same remedies that our predecessors did, but we use them on somewhat different theoretical grounds, that is all. Much as we have learned about the nature of disease, we have yet much more to learn. We have been studying until a comparatively recent period the results of disease, pathological morphology, rather than seeking for causes and the explanation of the manner in which they produce their results.

Apart from the inadequacy of our knowledge of the nature and causes of many morbid processes, the utilization of much of the knowledge we do possess is made difficult and not infrequently impossible by the extraordinary lack of accurate information concerning the physiological effects of drugs upon the skin when taken internally, and more especially when used locally. Without such knowledge scientific therapeutics based upon pathology is an impossibility. In addition to knowing what is to be accomplished in the treatment of disease it is absolutely necessary to know the effect of the agents we are employing if these are to be used accurately and with certainty of result.

No knowledge remains forever barren, and even now we are beginning to reap the fruits of our better understanding of the pathogenesis of many cutaneous diseases. The use of bacterial vaccines and of various sera promises to put the treatment of many diseases of the skin upon a thoroughly scientific basis dependent upon our knowledge of pathology and what is still better, promises to make

it more successful than ever before. We must not forget, however, that increased knowledge will also certainly show us how entirely futile must be every attempt to restore diseased tissues to the normal in certain cases. But even if increased knowledge does not bring us new remedies it will certainly enable us to employ old ones with a definiteness of purpose which is now impossible.

MODERN DERMATOLOGICAL PATHOLOGY AND ITS RELATION TO THERAPEUTICS *

By Charles J. White, M. D.

MEMBERS of the American Dermatological Association: Before entering upon this year's chosen theme I wish to thank your Council for its kindness in selecting me as one of its annual reporters and I desire also forgiveness if I fail to reach the normal standard of my predecessors. To confess the truth I have found the present task a very difficult one and I have pondered many hours over the exact meaning of this year's topic of discussion. In fact, I was obliged finally to consult your secretary, as one of the committee who sanctioned this subject, and the following paper is based upon his interpretation of the Council's choice.

During the last twenty years our pathological knowledge of cutaneous diseases has increased greatly owing to our improved histological technique, our deeper understanding of bio-chemical reactions and the almost universal participation in pathological investigation of our modern dermatologists; and as a result we have very complete histological data concerning practically every recognized dermatosis. So intimate, indeed, is this knowledge that it does not seem an exaggeration to assert that we know all that can be known of this valuable and fascinating subject until some brilliant genius shall devise some new means or methods of study and research.

The gist of our present knowledge of the seat and the nature of the changes in cutaneous diseases may be recorded in the following table which Darier has devised: In the stratum corneum we find the results of superficial trauma and the invasions of the acarus scabiei, microsporon furfur, microsporon minutissimum, tinea tricophytina and tinea favosa. In the strata corneum, lucidum, granulosum and upper spinosum we place the lesions of the hyperkeratoses including callus, clavus, akrokeratoma, ichthyosis, pityriasis rubra pilaris, lichen pilaris; and of the parakeratoses, embracing psoriasis, eczema seborrhoicum, eczema squamosum, dermatitis exfoliativa,

* Read before the 32d Annual Meeting of the American Dermatological Association, Annapolis, September 25, 1908.

pityriasis simplex; and finally the sequelæ of burns and vesicatories. In the strata lucidum, granulosum and upper spinosum we locate the dyskeratoses, comprising psorospermosis, molluscum contagiosum and Paget's disease. In the strata lucidum, granulosum and entire spinosum we note the acantholytic processes, i. e., eczema vesiculosum, herpes simplex, herpes zoster, prurigo, dermatitis herpetiformis, hydroa æstivale, impetigo, varicella and vaccina. In the lower rete we meet the hyperacanthotic changes—lichen planus, lichenification, verruca, vegetations, and acanthosis nigricans. In the stratum germinativum we encounter the dyschromias—albinism, melanoderma, chloasma, vitiligo and lentigines. And lastly in the epidermic diseases and affecting the layer as a whole we find the tumors—adenoma, epithelioma, keratoma, papilloma and the cysts.

Coming to the corium we know that the papillary layer is the principal seat of the congestions, erythemata and roseolæ; of the œdemata, especially urticaria; of the acute classes of dermatitis including erysipelas, ecthyma, ulcus durum, acne and folliculitis of the infectious type and the toxicodermata; and finally of the chronic group of dermatitis—tuberculosis, lupus erythematosus, syphilis, lepra, granuloma fungoides, elephantiasis and scleroderma. We know that throughout the corium proper we must look for the presence of cicatrices and the various degenerations to which the skin is heir—senile, colloid, myxœdematous and elastic. We know that the hypoderm is the seat of the deep hæmorrhages of purpura, of hydradenitis and of syphilitic, tuberculous and leprous gummata. And finally, we know that throughout the corium as a whole we may find the tumor formations of mollusciform nævi, sarcoma, fibroma, neuroma, myxoma, xanthoma and lipoma.

In addition to these comprehensive topographical data we have the time-honored, though somewhat modified, pathological classification of Hebra which separates our recognized diseases into hyperæmias, inflammations, hæmorrhages, hypertrophies, atrophies, new-growths, neuroses, diseases of the appendages and parasitic affections. It is not necessary for me to enumerate to this expert audience the approximately two hundred titles comprised in these seven classes, but let me state that with the complete understanding of these terms in one's mind plus the accurate information contained in the first table one should be able, on a moment's reflection, to comprehend exactly the entire pathological nature of any given disease.

Keen ability in diagnosis and profound knowledge of pathology

are, however, not sufficient accomplishments to enable the practitioner to cure disease. The physician must also be a master of therapeutics.

What has been our classical knowledge of healing agents and their physiological action? In the recent past the chief methods of administration of drugs has been by internal and by external means.

Internal Medication

Long experience has taught us that certain drugs, especially arsenic, mercury and the salicylates, tend toward stimulation of cells, and dermatologists have employed these drugs with varying success in many chronic conditions such as eczema, psoriasis, granuloma fungoides, dermatitis herpetiformis, pityriasis rubra, dermatitis exfoliativa, lichen planus, acne, chronic urticaria and sarcoma.

The iodide group has proved its marked ability to stimulate tissue changes and accomplish the disappearance of certain specific productions in the skin, notably those of syphilis, blastomycosis and actinomycosis.

Many drugs, such as bismuth, salicylic and carbolic acids, B-naphthol, creosote, salol, ichthyol, phosphate and bicarbonate of soda have antiseptic and antifermentative qualities which render them useful in those affections of the skin which we think are due to auto-intoxication.

To combat dermatoses which we associate with nerve disturbance, among which we include lichen planus, pemphigus, dermatitis herpetiformis, chronic urticaria and pruritus, we administer quinine with some success.

Against the hyperæmia of acne vulgaris, acne rosacea, and lupus erythematosus we employ ichthyol, ergot, and the antiseptics, carbolic acid, etc.

To stimulate the secretion of sweat pilocarpin has proved useful, but whether this drug acts upon the nerve terminals or upon the glands themselves, pharmacologists are still in doubt.

To control excessive sweating, on the other hand, atropine has proved our most successful medicament.

Diuretics and cathartics are of unquestioned value in the treatment of such diseases as acute eczema, dermatitis venenata, urticaria and the acnes and potassic acetate and magnesic sulphate stand almost preëminent in their respective classes.

This astonishingly small list of useful drugs indicates our

therapeutic knowledge of a few years ago and of this mere handful of somewhat valuable remedies only one drug can be called a specific.

External Medication

In this division of dermatological therapeutics the list of time-honored drugs is very large but once more it must be confessed that the number of really specific applications is distressingly small.

As detergents we have had soaps, oils, neutral fats and liquor carbonis detergens. To soothe and protect the skin we have relied on oxide of zinc and calamine, bicarbonate of soda, subnitrate of bismuth, subacetate of lead, talc and acetate of aluminum. As astringents tannic acid, alum, bismuth, boric acid, acetate and oleate of lead and zinc have been our stand-bys. To combat itching carbolic acid, chloral, camphor and menthol have proved their usefulness, some by actually depressing the nerve sensation and others by substituting a different stimulation. To produce anæsthesia carbolic acid has been our mainstay. For their stimulating effects we have employed tar, sulphur, mercury, green soap, nitrate of silver, carbolic acid, iodine, balsam of Peru, chrysarobin, cantharides, capsicum and croton oil. In the caustic class we have relied upon salicylic acid, bichloride of mercury, tincture of iodine, resorcin, mustard and nitrate of silver to produce a mild effect and upon carbolic, glacial acetic, trichloracetic, chromic, nitric and sulphuric acids, arsenic, chloride of zinc and the hydrates of potash and of soda to produce a deeper action, while as an immediate destroyer of tissue we have used the actual cautery, either electric or Paquelin. As keratolytics salicylic and boric acids, alkaline soaps, resorcin, liquor carbonis detergens and the milder alkaline caustics have established their worth. As reducing agents tar, in the form of pix liquida or of oleum picis, oil of juniper (cadini), oil of birch (rusci), ichthyol, creosote, resorcin, sulphur, aristol, chrysarobin, pyrogallic acid, permanganate of potash and B-naphthol have all received well-merited recognition. Carbolic and boric acids, mercury, sulphur, copper, sulpho-naphthol, iodoform, B-naphthol, styrax, balsam of Peru and chrysarobin have all answered their purposes admirably as effective superficial antiseptics and parasiticides, but when called upon to destroy deeper-lying organisms they have failed us lamentably.

Such is the story of the past, and these many drugs plus electricity, massage and the knife have constituted our therapeutic ar-

mamentarium up to within a few years. For the last ten or fifteen years, however, the science of dermatology has not remained stationary but has advanced pari passu with all other human activities and during this prolific epoch many new forms of treatment have been discovered and have rendered invaluable service to our successful struggle with disease.

Let me enumerate these innovations and discoveries. 1. New drugs. 2. Radiotherapy. 3. Electrotherapy. 4. Actinotherapy. 5. Hydrotherapy. 6. Organotherapy. 7. Psychotherapy. 8. Congelation. 9. Hyperæmia; and lastly, 10, the wonderful and pregnant theories and applications of the various sera. Surely this list is an impressive witness to the mental activity and fertility of modern medical men.

And now let us examine these new methods a little more closely.

New Drugs (External)

The compounding of this list is a difficult task, first, because the line dividing the old from the new must be a purely arbitrary one; secondly, because out of the hundreds of new synthetic compounds which have been manufactured but comparatively few have established their superiority over the older, well-tried drugs; and thirdly, because the personal equation proves an important factor, for with many medicines one therapeutist succeeds where another fails. I must, therefore, confine this chapter to the few, relatively modern drugs which have aided me in overcoming difficulties.

Among the aniline dyes a few, such as methylene and pyoktanin blue and scharlach R have proved of distinct assistance in cleansing foul or indolent ulcers and in stimulating granulation in the trying ulcerations of scleroderma, Raynaud's disease and other trophic disturbances, and in the arteritic sores consequent upon senility or over-exposure to X-rays. As a stimulant in lupus vulgaris and lupus erythematosus these brilliant dyes have been of benefit also.

From the long list of newly compounded dusting powders, aristol (dithymol di-iodide), nosophen (tetra-iodo-phenolphtalein) and tannoform (tannin-formaldehyde) seem to be the most satisfactory substitutes for the most valuable but irritating and evil-smelling iodoform and they surely aid one in drying up serous or purulent ulcers or the excessive secretions of hyperidrosis.

In seborrhœa curesol (resorcin mono-acetate) replaces resorcin to great advantage and is far less irritating and discolors grey hair

but little. Combined with corrosive sublimate, formic acid and alcohol, cresol constitutes the best hair wash that I have ever found for curing dandruff. Another useful adjuvant in our daily struggle against seborrhœa capitis is captol (an impure mixture of chloral hydrate and tannic acid) and when combined with chloral hydrate, tartaric acid and alcohol provides a good cleansing and stimulating hair wash.

Pilocarpin, by its exciting influence on the hair, has won a well-recognized place for itself in the treatment of alopecia. Trikresol (containing the ortho, meta and parakresols) from its very strength proves its usefulness as a substitute for croton oil in obstinate cases of alopecia areata.

When confronted with a distressingly painful ulcer one derives benefit from orthoform (the methyl ester of para-amido-meta-oxybenzoic acid). This powder, applied in ointment form to a broken surface does certainly alleviate suffering, but in susceptible individuals it not infrequently exerts a necrotic action on the tissues, so that one must be vigilant in its use.

This concludes the list of the newer external remedies which have shown marked superiority in my hands over time-hallowed drugs of previous generations but surely the advance recorded here is not remarkable.

New Drugs (Internal)

In this category modern therapeutic progress is equally limited. Through the work of Wright, Paramore and others we have learned that the coagulability of the blood is diminished in œdema circumscriptum acutum, pernio, purpura and urticaria. We have learned also that the acid foods increase this fault and that milk decreases it. To combat this condition Wright and his followers have suggested the administration of calcium salts, especially the lactate in small continued doses or the chloride in one or two massive amounts, and this advice has been taken by many of us. Personally, I agree to the first two of these tenets, but as to the practical value of the third I have not become wholly convinced despite rather extensive trials.

To overcome the new disease, blastomycosis, we have a very valuable remedy in the old drug, iodide of potash, and this medicament is equally beneficial in actinomycosis.

To vanquish the old disease, lichen planus, we have made use of the old drug mercury with great success and this happy result de-

pends probably on the stimulating effect of this metal on the nutrition of cells. In my own practice it has entirely supplanted arsenic.

In leprosy many experienced therapeutists have employed chaulmoogra (oleum gynocardiæ) with some benefit. This drug is certainly not a specific, but many of these unfortunates have improved distinctly under its influence. Its great disadvantage is its irritative action on the stomach, and for this reason it should be given in milk, in capsules, or in the form of an emulsion. Dyer seems to have obtained even better results in the treatment of this baleful disease by the simple methods of modern hygiene.

After an exposure to syphilis the inunction of the penis with a 30% calomel ointment has been known to abort an infection of the disease in one human subject at least, and Metchnikoff, Hallopeau and others have found this simple procedure absolutely trustworthy in many animal experiments. Neisser states in addition that the same results may be obtained by the use of 0.3% bichloride of mercury solution, 10% quinine-glycerine-water solution, or 50% iodoform-glycerine.

New Drugs (Subcutaneous.)

In this division of therapeutics there has been distinct advance. In the treatment of syphilis the subcutaneous method of mercurial administration has almost superseded all others on the continent of Europe, and to a certain extent in America—certainly in rebellious and in emergency cases. New forms of mercury have sprung into use, such as the grey oil, the cyanide and the salicylate, which have their greatest vogue in France and Germany, while the safer soluble salts, especially the bichloride, are in favor here.

Since the discovery of the treponema pallidum an enormous amount of experimental work has been done everywhere, and we have been able to learn much about the biology and the treatment of syphilis. In Europe, particularly, investigators have found that combinations of salicylic acid and of arsenic with mercury seem to exert a more powerful action on the cause of the disease. This discovery has led to the use of énésol, the salicyl-arsenate of mercury, and in my own experience injections of this sterile liquid have aborted several fresh roseolæ within a few days. Besides its rapidity of action, énésol possesses still further and almost equally important advantages in its striking painlessness and in its freedom from resulting infiltration, so customary with the bichloride and practically all other

forms of injected mercury. Recently, we have been using this drug in lichen planus with striking success, the combination of mercury and arsenic being a happy one in this disease.

With the knowledge of the potent effects of arsenic on the protozoa some experimenters have endeavored to assert the superiority of this drug over mercury in the treatment of syphilis. Metchnikoff, Uhlenhuth and Weidenz claim that atoxyl (arsenic acid anilid) will prevent the appearance of syphilitic symptoms secondary to the artificial inoculation of apes and rabbits, while vigorous treatment with mercury proves less successful. Neisser makes the same claim, but uses acetyl atoxyl, which is far less toxic, and, being a stable product, is sterilizable. Metchnikoff, Neisser and Hallopeau believe they have injected numerous patients with atoxyl successfully, and Hallopeau has become a strong advocate of its use, but his confrères, Renault, Gaucher and Hoffmann, assert that this drug acts only by destroying the easily accessible spirochætes and leaves the deeper-lying organisms to flourish at will. Consequently, they condemn the use of this medicament in no unmeasured terms.

Hallopeau records the successful employment of atoxyl in leprosy, Neisser in frambœsia, and others in granuloma fungoides.

Arsenic in another compound form has been the subject of still further experimentation in other diseases. Numerous investigators have injected sodium cacodylate (sodium dimethyl arsenate) in leprosy, psoriasis and lichen planus, and are enthusiastic in their praise of the superior results obtained from its use; but many others feel that the dangers of toxic absorption, especially in regard to the optic nerve, associated with these injections, far outweigh any possible therapeutic advantages.

Thiosinamin (allyl-sulphocarbamide) has gained some strong partisans as a solvent of hypertrophic fibrous tissue, but the injections of this drug in my clinic have been attended with only partial success. Even stronger reliance is placed in fibrolysin—a combination of thiosinamin and sodium salicylate—by those familiar with this new drug, but personally I believe that excisions with wide margins and with care that the abnormal tissue is not brought into contact with the normal form our best and quickest cure of keloidal growths.

Radiotherapy.

Roentgen's great discovery did not remain long the sole possession of the skiagraphers, but was soon shared by the dermato-therapeutists. Pusey, Allen, Stelwagon and Williams in America, Freund

and Schiff in Austria, Oudin, Barthelémy and Darier in France, and Walsh, Morris and Sequeira in England were the pioneers in this new field. Pathological study followed at once, and through these last ten years we have learned that the X-rays in therapeutic doses produce a slow degeneration of the elements of the skin which affects the nucleus as well as the cellular protoplasm. All layers may be influenced, and it is an interesting and fortunate phenomenon that tissues are modified in direct proportion to their complexity. Thus epidermic structures first feel the energy of these rays and yield most to their power, while collagen, elastin and muscle remain somewhat passive to their influence. Beyond a certain degree of dosage inflammatory reaction occurs and dilatation or even new formation of vessels and extravasation of cells and of serum result, followed by proliferation of connective tissue. In the case of malignant tumors this growth of collagen progresses centripetally and tends to encapsulate the tumor mass, while the tumor cells themselves undergo degeneration and necrosis.

When these rays are focused on hairs a weak exposure produces only a constriction in the shaft, a medium dose breaks the hair gradually with a pointed fracture, but strong radiation causes an immediate and blunt break.

Enlarging on these fundamental pathological properties, we find that the X-rays in sufficient doses produce an atrophy of all the appendages of the skin, degeneration and eventual disappearance of glandular cells, and retardation in growth or at times destruction of bacteria. In moderate doses the rays act as a stimulant of metabolism and as an anodyne, while in heavy or long continued amounts they produce destruction. Bearing these facts in mind, one can well understand the beneficial effects which dermatologists have obtained in hypertrichosis, acne vulgaris, sycosis, ringworm, favus, seborrhœa of the face and hyperidrosis; in lupus vulgaris, chronic eczema, psoriasis, lupus erythematosus, lichen planus, granuloma fungoides, cancer, sarcoma, tuberculosis and rhinoscleroma; and finally in urticaria, pruritus and hyperæsthesia of the skin.

In addition let me add a word as to the possible use of these rays as an adjuvant in opsonic treatment. Workers in this field have found striking rises of the opsonic index after exposure of the diseased skin to the X-rays, and they believe that the rays liberate in the tissues substances equivalent to doses of autogenous vaccination. In fact this revelation may be our best explanation of the beneficial effects of the rays.

From a personal point of view I regard the X-rays as the greatest single blessing which has ever been bestowed upon dermatology, with the exception of mercury, but unfortunately there is a reverse side to this great and valuable therapeutic ally. We have all encountered the persistently painful and not infrequently fatal effects of over-doses of Roentgen rays. Pathologically, we know these frightful ulcerations to be due to endarteritis and to the consequent necrosis of the tissues. With this knowledge in mind, don't let us waste precious time in trying to cure such destructions with ointments, but advise at once a radical surgical extirpation of the diseased focus, followed by a skin graft. By such procedures relief from pain and even permanent cures have been established. When epitheliomata have resulted from overdoses of these rays, immediate surgical interference should be undertaken.

In 1896 Becquerel discovered the radiant energy of uranium, and soon after the Curies separated radium and polonium from pitchblende. Not many months elapsed before dermatologists began their investigations upon the possible applicability of this new source of light to the cure of skin disease. From its compact size and isolation this new form of radiant force was felt to be peculiarly adapted to the treatment of cavities and pockets of disease to which it was difficult to introduce or to confine the X-rays. Wickham, Hallopeau, Danlos, Gastou, Béclère in France, and Abbe, Williams and Morton in America have been the enthusiastic supporters of this method of treatment, and the recent publications of Wickham and Degrais of the Paris Laboratoire Biologique de Radium reveal the successful therapeutic possibilities of this extraordinary mineral in destroying epithelioma of the eyelids, nose, ears and mouth, lupus vulgaris, nævus vascularis and keloids; in curing patchy eczema and psoriasis; and in calming the severe pruritus of neurodermite, lichenification and eczema.

The present method of applying radium in capsules or incorporated in varnish forms one of the distinct therapeutic advances of the day.

The power of penetration of the gamma rays of radium is equal to that of the Roentgen rays, and their destructive action is equally powerful, for these two forces are now supposed to be similar, i. e., vibrations of ether. To employ these rays alone one interposes a screen of aluminum which prevents the passage of the alpha and beta rays which are more rapid and superficial in action, but relatively "harmless atoms" (Wickham), which do not exist in X-rays.

To reverse this action and diminish the quantity of the slowly acting, insidious, penetrating gamma rays, unnecessary superficial processes, one must obtain a radio-active substance poor in these rays.

Pathologically, radium tends to destroy bacteria and to absorb previously formed tissues and reduce them to their embryonic state. Later the fibrous and elastic elements begin to grow again and produce a soft, smooth, non-pigmented scar composed of thin, delicate, regular layers of epithelium, collagen and elastin.

Electrotherapy.

The development and therapeutic adaptation of the high frequency current should receive perhaps our first recognition in this chapter.

This method of treating skin diseases was probably first introduced by Morton, but Tesla, d'Arsonval and Oudin have left an indelible impression in the history of the development of this procedure. The high frequency current consists of a violent bluish discharge produced by the frequent alterations of a high potential current. The pathological effect of this bluish discharge is to produce a transient or more permanent hyperæmia, and its advocates claim beneficial results as a stimulant in chronic eczema, acne vulgaris, alopecia areata, inveterate psoriasis, lupus erythematosus and kraurosis vulvæ; as a destructive agent in warts, nævi, molluscum contagiosum, rodent ulcer and lupus vulgaris; and finally as a sedative in pruritus.

A second branch of this subject is franklinization, the use of the static current. This form of electrical discharge improves the vessel tonus in the sense of vaso-constriction, and produces a disappearance of existing inflammation and a recession of œdema. Winkler recounts some brilliant results in the treatment of lupus vulgaris by the combined methods of destruction by soft X-ray tubes and subsequent franklinization.

The third division of electrotherapy is treatment by electrophoresis, the introduction of drugs into the skin from the negative or from the positive electrode of a battery, using ten to twenty milliamperes of current for ten to thirty minutes.

Cataphoresis has been employed for some years, and Ehrmann and Gärtner in 1899 recorded experiments by ionization with bichloride of mercury in syphilis, and later Leduc with chloride of zinc in lupus vulgaris and in epithelioma, and Volk with the same metallic salt in lupus also.

Baum has demonstrated more recently that ana- and cataphoresis are both possible and beneficial. From the anode he found that he could force into the skin corrosive sublimate, cocaine, lithium, methylene blue, quinine and atropine, while from the cathode salicylic, acetic and chromic acids, ichthyol or arsenic.

As drugs tend to be eliminated in part by the cutaneous glandular system, we see that this method, if employed successfully, is peculiarly adapted to follicular troubles such as sycosis, ringworm and cheilitis exfoliativa.

Actinotherapy.

Finsen's name is forever associated with this branch of our science. Finsen's lamp, which originally depended upon the light of the sun, soon gave place to Reyn's modification, which made use of the arc lamp which is not only always at our service, but which also proved richer in the essential acting rays. Lortet and Genoud introduced a smaller but somewhat similar lamp, which cost far less to install and much less to operate, and produced its effects with greater rapidity, but its penetrating power proved so slight that its sphere of usefulness necessarily became limited to superficial dermatoses. The relative expense of operation of these three lamps may be inferred from the fact that the Finsen lamp requires 80 amperes, the Reyn modification 20, and the Lortet and Genoud 5 to 15.

Mention must be made of the other lamps which ingenious men have invented. Bang introduced hollow iron electrodes which are rich in erythema-producing rays. The Görl, the Leduc and the Piffard lamps emit sparks between several closely contiguous metal electrodes, and these sparks are ladened with ultra-violet rays, but very deficient in penetration. Still other lamps are provided with parabolic reflectors which permit of wide but superficial radiation. Kromayer's name is chiefly associated with the quartz lenses which he claims have, in his hands, the power of producing rays with a penetrating power thirty times greater than those of the Finsen-Reyn instrument, while the superficial effect is so strong that it must be tempered by methylene blue. Kromayer insists that this light is the very best ever produced for the treatment of many of the diseases amenable to the influence of light.

Pathologically these many forms of light depend for their action upon the actinic rays—those at or beyond the violet end of the spectrum, but unfortunately these same rays have the least penetrative power. Exposure to these rays stimulates cell nutrition, produces

inflammatory reaction and destroys bacteria at a depth of 1.5 mm. if the tissues have been exsanguinated. Compared with X-rays these emanations have greater bactericidal qualities, but the X-rays can penetrate deeper and can be used effectively over far larger surfaces.

Jansen and Delbanco describe the effect of the Finsen apparatus in these words: "The first visible signs are dilatation of vessels with ensuing œdema, cellular necrosis and crust formation attended by demarcating inflammation with leucocytic emigration and subsequent active regeneration." The œdema is most prominent superficially, the intercellular spaces being widened and the cells themselves becoming spongioid. In lupus vulgaris the epithelioid and giant cells undergo this same vacuolization. Collagen shares the same œdematization, its fibers becoming swollen and separated. Finsen light is thus, in truth, a caustic but fortunately selective in its action, destroying the pathological cells and sparing relatively collagen and elastin.

Among the many diseases which yield to a greater or lesser extent to actinotherapy may be mentioned lupus vulgaris, chronic patches of lupus erythematosus, of eczema and of psoriasis, varicose and venereal ulcers, telangiectases and nævus vascularis, acne rosacea and vulgaris, sycosis, furunculosis, folliculitis decalvans and alopecia furfuracea and areata.

Hydrotherapy.

Much is now written about the value of hydrotherapeutics in internal medicine, and dermatologists have not failed to try its effects in many of the generalized chronic dermatoses which we are prone to believe must arise from some error of metabolism. Strangely enough, this branch of therapeutics includes treatment by light as well as by water, and should therefore be described in this connection.

Dr. Hyde has interested himself much in the effect of sunlight upon the human body, and you will all recall his admirable résumé of the subject. The Germans more than other nations have recognized the healing action of the sun, and you all know of their institutes where men and women spend the greater part of the daylight hours out-of-doors scantily clad. Freund summarizes this action of light in the following manner: Light irritates the skin and produces inflammation; it acts directly on the blood and the blood vessels; with intense exposures over wide areas it attracts great quantities of blood to the surface and empties deep organs; it induces an escape of sweat; it modifies metabolism; it influences the mind; it

exerts an antiparasitic power; and in overdoses it produces serious disturbances.

Under such circumstances one can well appreciate the important possibilities and functions of the modern powerful light cabinets which find their place in up-to-date hydrotherapeutic establishments. In addition we have the effects of medicated tub baths, the Scotch douches, the needle baths, et cetera, all of which certainly exert superficial and deep influence on the human organism. In my own experience I feel convinced that cases of widespread eczema and psoriasis, pemphigus, dermatitis herpetiformis, scleroderma and dermatitis exfoliativa have been somewhat benefited by this combined treatment of large doses of heat, light and water, chiefly, I believe, by the great stimulation of the general circulation.

Organotherapy.

In dealing with the functions and secretions of the ductless glands we are treading on speculative ground to a large extent, but the researches and experiments of Sajous, Schäfer, Gentès, Mulon, Crile, Cyon, Cajal and Andriezen certainly give us food for thought.

These internal secretions are derived from the pituitary body, the thyroid and parathyroid glands, the adrenals, the leucocytes, and in our growing years from the thymus. It is an accepted truth, I think, that myxœdema, cretinism, and Basedow's disease are associated with changes in the thyroid group; that Addison's disease follows disorders of the suprarenal glands; while Bogolepoff and others have found at autopsy atrophy of the thyroid gland in pityriasis rubra of Hebra, adenoma of the thyroid in pemphigus foliaceus, adenocarcinoma of the thyroid in dermatitis herpetiformis, lymphosarcoma of the suprarenal capsules in pityriasis rubra of Hebra, and atrophy of the same organs in erythrodermic exfoliante.

Sajous states that removal or disease of the pituitary body causes lowering of the temperature and of blood pressure, rapid emaciation, dyspnœa, coma and death, and that hyperæmia and hypertrophy of this organ produces acromegaly. There is no evidence that the pituitary body has a secretion, but the organ is connected by nerves with the thyroid group and with the adrenals. The secretion of the suprarenal capsules is accountable for hæmoglobin which carries over 90% of the oxygen to the tissues, and hence with destruction of these glands we have lowered temperature and blood pressure, arrest of nutrition, emaciation and death. Adrenalin ex-

tract, therefore, raises temperature and blood pressure and enhances oxygenation and metabolism. Zülzer and others have found that adrenalin has the physiological task of mobilizing the sugar from the liver and probably also from the other tissues. This knowledge may mean much to us in future in the treatment of cutaneous diabetes. The thyroid and parathyroids exert their salutary effects by the production of iodothyrine, which neutralizes the toxic properties of nitrogen metabolism in the blood. This secretion activates metabolism in two ways, i. e., by increasing the excitability of all cells and by exciting the governing center of general metabolism. Sajous expresses this theory by the axiom that thyroid secretion increases the autoprotectic activity of the blood by increasing its opsonic power.

Adapting these theories to commonplace therapy, we know that the internal administration of thyroid extract restores the dry, coarse hair, the wizened skin and the brittle nails of myxœdema to comparative health, and again that injection of adrenalin contracts capillaries and is useful in the treatment of erythema multiforme, urticaria and purpura.

Psychotherapy.

This branch of therapeutics is certainly a difficult one to approach from a purely scientific point of view. Probably every century of civilized life has encountered some contemporary cult which has undertaken by purely mental tactics the cure of disease. To-day it is "christian science" which plays an important rôle in human activities, especially in England and in America and, I think, none but a thoroughly sceptical and unreceptive mind can deny that this "faith hath made many a man whole" who has honestly obeyed a physician's advice without success. Within the last two years we in Boston have heard much of Dr. Worcester's work at Emmanuel church. This form of "mental healing" is not practiced by men and women utterly ignorant of medicine, but is employed by an earnest, sincere clergyman and his colleagues upon suitable patients carefully selected by some of Boston's best-known physicians. Results have been closely watched, and it is only just to state that many brilliant cures have been attained. Personally I incline much to the efficacy of such seemingly radical measures. In these days when we hear so much of toxins and autotoxins and the great power for evil these occult substances can bring to pass in the human body, I believe that it is only fair to admit that the restoration to health of a dis-

ordered mind can exercise great power for good in the internal economy. Those of you who have suffered from dyspepsia know how quickly your mind is depressed, how "blue" you become, how physically exhausted you grow when a fresh toxæmia arises from the ingestion of some indigestible food. Conversely, you know also how a change of scene, a sudden freedom from care or anxiety, a shifting of your habitat from irritating surroundings to the house of a cheerful friend can restore your equilibrium and drive away and dispel even a severe attack of dyspepsia. This rapid change is purely the result of the influence of "mind over matter," and so I believe one can in truth extend this theory to other apparently graver disorders than dyspepsia, and consequently we should include modern psychotherapy, practiced by an honest, medically educated, mentally capable man, among the blessings of contemporaneous therapeutics.

Congelation.

This method of treating skin diseases began in 1900 when Dethlefson introduced congelation by ethyl chloride. Almost at the same time Dade began his pioneer work with liquid air, and in 1905 Juliusberg continued these valuable experiments with carbon dioxide. Each and all of these substances have proved their worth and have established a lasting place in our armamentarium. They all act in the same manner and produce similar pathological sequelæ. Ethyl chloride is of course a comparatively mild refrigerant, but carbon dioxide with a temperature of minus 90°C. and liquid air with a coldness double that of carbon dioxide are naturally formidable weapons which should be employed only by those expert in their use. Ethyl chloride and carbon dioxide are easily obtained, comparatively cheap and durable substances, but liquid air, on the other hand, is a precious fluid because difficult to obtain and impossible to keep for more than a few days. Ethyl chloride is used in the form of a spray by us all, carbon dioxide is employed in a similar manner by Juliusberg, but in the shape of snow by Pusey and his followers, while liquid air is applied on a cotton stick by Dade and others who are fortunate enough to procure this extraordinary substance. The duration of exposure and the amount of pressure exerted in the latter methods determine the effect of these three agents. Refrigeration by ethyl chloride requires from five to ten seconds, is very superficial, is quite transient, and is followed by no visible secondary reaction unless the freezing is prolonged for some time. One second's application of carbon dioxide produces a

freeze of twenty to thirty seconds' duration. One minute's exposure to this spray is followed twelve hours later by inflammatory redness and vesicle formation. Ten seconds' medium pressure from liquid air induces solid congelation succeeded, sometimes within a half hour, by the production of a bulla. These figures vary much according to the tissue subjected to the influence of these three substances, thin cicatricial skin requiring a minimum exposure, while, tough, raised, pigmented, hairy moles, will tolerate much greater doses.

Pathologically, the changes produced by ethyl chloride, carbon dioxide, and liquid air are the same, granted that the degree of refrigeration has been of equal amount. These effects are comprehensively stated in the following quotation: Juliusberg * excised one piece of normal skin immediately after freezing, and a second piece fourteen hours later. In the first piece the only change found was in the vessels which were filled with thrombi. From the second piece it was evident that the results of freezing were progressive and widespread. The whole epidermis had apparently undergone a homogeneous destruction. A few cells of the basal layer still retained unaltered nuclei, but otherwise the remaining structures had entirely disappeared, leaving empty, clear spaces in their place. Below the epithelial layer was a band of polynuclear leucocytes. There were also masses of leucocytes scattered about among the swollen and hypertrophied connective tissue cells. The lymph spaces were dilated and filled with a homogeneous substance. The blood vessels were also distended, occluded by thrombi and surrounded by a leucocytic infiltration. The whole connective tissue was permeated by a network of fibrin which, in the papillæ, was arranged in orderly coils.

And now what is the practical side of this question? From my own experience I have learned that the application of ethyl chloride, first recommended by Howard Morrow, in severe cases of herpes zoster is a godsend. The intolerable pain, frequently encountered in old persons and formerly often a menace to life, is allayed by freezing the spinal seat of the disease twice daily, and by local chilling of the cutaneous lesions when discomfort demands this procedure. In the treatment of other diseases we at the Massachusetts General Hospital usually employ carbon dioxide or liquid air, for their effect is more rapid and far reaching.

Acne vulgaris, sycosis, ulcus varicosus, X-ray dermatitis, lupus vulgaris, epithelioma, lupus erythematosus, keratosis senilis, verruca, nævus vascularis, pigmentosus and pilosus have all been treated by

*H. P. Towle, Résumé in Boston Med. and Surg. Jour. June 4, 1908—p. 268.

numerous clinicians with varying success, and from my own observations at the skin clinic of the Massachusetts General Hospital I feel justified in stating that there is no better treatment for verruca, herpes zoster and all forms of nævus of any considerable size than by refrigeration by one of these three new therapeutic weapons.

Hyperæmia.

The idea of curing maladies by bringing a maximum amount of blood to the focus of the disease is not a new one. Physicians have made use of poultices and cups for ages, and we have seen in our chapters on drugs, on electrotherapy, on actinotherapy and on hydrotherapy the value of this method in the cure or amelioration of various dermatoses. But the experiments of Bier have recently brought this subject in a striking manner to our eyes.

Experimentally, Müller and Peiser found that the pus of abscesses, furuncles and carbuncles contain polymorphonuclear neutrophiles which harbor an enzyme capable of dissolving the tissues—a proteolytic ferment. To combat this action it is wise to add an anti-ferment, and this can be obtained from the serum of the patient or from another individual. An easy method of introducing an autogenous antiferment is to bring more blood to the focus of the disease, and this experimental evidence gives us a probable clue to the value of the so-called Bier treatment and to the same results obtained by the other methods to which I have referred in this paper.

To induce obstructive hyperæmia one can employ a turniquet, to produce active hyperæmia by mechanical means one can make use of the von Esmarck bandage followed by a sudden release of this pressure, or one can apply wet or dry cups.

In recent years we have heard great encomiums bestowed upon these methods in the treatment of ulcers, chronic eczema, acne vulgaris, old plaques of psoriasis, scleroderma and onychia. Without wishing to disparage the work of others, I feel bound to declare that in my hands, perhaps through lack of proper experience in technique, these mechanical methods of inducing hyperæmia have never convinced me of their superority over other forms of treatment.

Serum Therapy.

This huge subject, at present so theoretical but still so pregnant with future limitless practical possibilities, seems almost too vast for us to attack at the end of this long dissertation on accomplished facts in dermatological pathology and therapeutics. The

purely scientific data in regard to agglutinins, antitoxins, antiendotoxins, bacteriolysins, coagulins, and precipitins cannot be described here, but it seems proper to record the various sera which have been devised and which have scored more or less success in the hands of their makers.

Acne vulgaris. Unna, Gilchrist, Hodara and Beck believe in a special organism as the cause of this disease, while Sabouraud claims that the acne bacillus only paves the way, producing seborrhœa, to which is added the staphylococcus albus butyricus, the symbiosis resulting in acne. Gilchrist was the first to grow the bacillus of acne and states that the serum of acne patients agglutinates these bacilli. Many other men, recognizing the important rôle which the staphylococcus epidermidis albus plays in the formation of acne lesions, have vaccinated their patients with culture products from this organism, sometimes with brilliant and sometimes with negative results. In conjunction with these injections advantage may be obtained by applying X-rays to the seat of disease, the resulting congestion bringing more opsonins to the diseased glands.

Acne rosacea. In the congestive stages of this affection opsonic treatment (again with staphylococcus epidermidis albus vaccine) has produced favorable results frequently, but in the hypertrophic cases I am convinced that the best treatment is the knife, by which the deformity is whittled down to the desired shape.

Ambustio. Petit has recently described the value of hot horse serum in the management of burns, and has demonstrated the fact that in different areas on the same individual those treated in this way are more comfortable and heal faster than those dressed by any of the older, unsatisfactory methods. Petit believes this hot serum revives many of the injured cells so that they recuperate and aid in the healing process instead of dying and generating poisons; and furthermore, that this serum summons leucocytes to the seat of the injury.

Carbunculus, furunculus, coccogenic sycosis. In these three conditions, which practically all men agree are produced by the staphylococcus, we have a really accepted specific, I think, in the staphylococcus vaccine. In my own practice, I know what a blessing this serum has proved in numerous examples of these hitherto often intractable diseases. Nevertheless, there are exceptions to this rule as to all others.

Carcinoma. Crile, Kelling, Beebe, Clowes and Wile are among the investigators who have been most active in experimentation with

cancer serum. These men have found that the blood serum of a cancer patient may hæmolyze normal corpuscles, but normal blood serum usually does not hæmolyze the red corpuscles of a cancer patient. Crile found this test to be true in 82% of 80 cases of carcinoma. In the remaining patients the disease was too far advanced to produce this reaction.

Adamkiewicz has evolved a serum which he calls cancroin and which he claims contains the toxin of cancer cells. This resembles chemically hydrate of trimethylvinylammonium, and when injected into a cancer produces a shrinking of the pathological cells with the formation of lacunæ, a small cell infiltration and a production of fibrous tissue.

Coley also records cases of improvement following the use of his mixed serum (vide infra).

Diphtheria. The value of diphtheria antitoxin in the treatment of cutaneous cases of this disease is too well known to need further mention here.

Erysipelas. Marmorek's anti-streptococcus serum in 10cc. doses has been used with a certain degree of success in the treatment of this disease. Laplace has found in vitro that streptococcus of Fehleisen grows less vigorously in acid media than in neutral or alkaline soils, and so recommends the addition of 5% of hydrochloric acid to a $^1/_{1000}$ solution of corrosive sublimate. But despite these scientific data the dermatological world still places its greatest reliance in ichthyol in combatting this specific invasion of the lymph spaces.

Glanders. Martel, adopting the von Pirquet technique in the use of mallein (the prepared product of the bacillus of glanders), records a distinct cutaneous reaction in three cases of human glanders, while all controls proved negative.

Lepra. Carrasquilla's serum is well known to all, but many experimenters, including Arning, Buzzi, Herrmann and Abraham, have denied the usefulness of this substance in the treatment of leprosy.

Rost claims to have cultivated the Hansen bacillus and to have used successfully the resulting product which he calls leprolin, but this statement apparently remains unconfirmed by others.

Deycke-Pasha and Resched-Bey have devised a fatty body which they call nastin. This is a little known substance and is produced by incubating a small leproma in sterilized water for a few weeks. A small streptothrix resembling the lepra bacillus is found and extracted and mixed with benzoyl-chloride. Injection of this

standardized product brings about reactions in the leprous quite analogous to the reactions of tuberculin in the tuberculous. The inventors claim for nastin considerable prophylactic powers, and when injected into fresh or early cases of leprosy amelioration of symptoms and even cures. Hartigan tried this material in one case, and after two inoculations the leper noted a diminution and desication of his lesions and a better feeling and a better appetite than at any time during the previous five years.

Purpura. Encouraging reports of successful treatment of this sometimes serious condition have been made by Crile, who has transfused whole normal blood, and by Kohler, Weil and Leary, who recommend the subcutaneous injection of 30cc. of fresh rabbit serum.

Rhinoscleroma. Erben has used successfully in combatting this rather uncommon malady a serum derived from immunized guinea pigs. In his experiments he found this form of serum far more powerful than that from cultures of the rhinoscleroma bacillus. I think, however, that X-ray treatment has still more adherents at present.

Sarcoma. In describing the serum treatment of this almost uniformly fatal disease one should give precedence to the work of Coley commenced in 1891 and continued by its originator and by others up to the present time. Coley's most recent statistics are as follows: Out of thirty-six cases of inoperable sarcoma and carcinoma treated by his latest formula in the production of his mixed toxins of streptococcus and bacillus prodigiosus, twenty-one have remained alive between five and thirteen years, and twelve others between one and five years—surely a striking record.

Crile and Beebe have recently devised another method of treatment. By overbleeding tumor dogs and then overtransfusing from immune dogs they have been able to cure nine of ten of these animals, some of which were cachectic and showed metastases. These same authorities have repeated these experiments in six human patients. Their tumors were first excised and normal blood was transfused. These tumors were of the round or spindle cell varieties (the most malignant types), and after sixteen months the patients were alive and apparently free from recurrence, and Crile and Beebe hope that they may become an immune source from which to derive blood for the cure of others.

Syphilis. Here again is another disease in which science has given us a specific serum capable of divulging very accurately (80-90%) the nature of evident or obscure cases, but as yet incapable of use as a curative agent. Romme, however, states that syph-

ilitic serum contains a specific antitoxin whose presence is proved by its peculiar power of attracting to itself the syphilitic poison and alexin of the hæmolytic serum, and this fact should lead to the production of a vaccine.

In this place it seems fitting to pay tribute to the splendid achievements of Schaudinn, Hoffmann, Neisser, Metchnikoff, Roux, Wassermann and Bruck in this all-important branch of human knowledge.

Tuberculosis. Once more in this chapter we must record great and invaluable diagnostic advance in our study of disease, which, alas, has not as yet been accompanied by corresponding therapeutic progress. The successful subcutaneous, cutaneous and ophthalmic use of tuberculin devised by Koch, von Pirquet and Calmette respectively as a diagnostic agent is an undeniable fact, but unfortunately the curative effects of this substance do not stand on so firm a foundation despite the continual employment of this material by many therapeutists of the present day.

I have now, gentlemen, reached the end of my conception of this year's topic for discussion, and in closing I must crave your pardon for encroaching so very long on time which, I know, could have been more profitably spent on your discussion rather than on my presentation of the subject.

SYPHILIS IN ITS RELATION TO GENERAL PARALYSIS OF THE INSANE *

By Andrew P. Biddle, M. D., Detroit, Mich.

DURING the last decade or more the interest of the members of the American Dermatological Association, as shown in its Annual Transactions, has been directed more to the mechanical and laboratory sides of the study of dermatology than to the academic consideration of the various other problems which have confronted us. The advances which have been made and are being made in dermatology, the contributions to the science of medicine made by the extensive researches and technical skill of the laboratory worker has been the equal of any of the other branches of medicine. Dermatology deserves to share with her sister departments the glory of the achievements of the last decade. Yet there are many problems still unsolved, many to which we as clinicians must add our mite to the fund of general knowledge and our energy to their solution. For this reason I would take you away from the field of the definite and positive into the realm of the speculative and ask your kindly consideration of a phase of syphilis in a sense broader than the contemplation of its cutaneous and muco-cutaneous manifestations, which after all form so small a part of the symptoms complex and the serious aspects of the disease. And in this I incidentally make an earnest plea for a broader and more comprehensive consideration of our limited field of activity in its relation to general medicine. We would be the gainer both by the experience and by personal renumeration by the study of the patient upon a broader basis, were we to qualify as expert interpreters of other symptoms than the mere cutaneous ones. My own experience as a consultant has in not a few instances taught me that this lack of a more intimate knowledge of general medicine has rendered my worth as a consultant of far less value than I could have wished. Our studies even in this Association should to my mind be placed upon a more comprehensive plane. We should in addition to the technical side

* Read before the 32d Annual Meeting of the American Dermatological Association, Annapolis, September 25, 1908.

consider the disease also more in its relation to the other physical, moral and mental conditions of the patient. And not a little of our failure comes, I believe, from the lack of the constant study of general medicine.

I am well aware that in the field of research suggested by the title but little progress has recently been made; yet to my mind no antagonist is more worthy of our steel of investigation than this foe, so destructive to the physical and mental powers of the human race.

At this writing there lies on a bed in St. Mary's Hospital in my service a woman, aged 27 years, in a state of melancholia, too tired, too languid to make any effort to rise, indifferent as to her surroundings, except as they may affect her morbid thoughts, dwelling with more than ordinary emphasis on her past ability and present inability to work and on her great personal loss by the recent death of her only sister; easily roused to consciousness and her surroundings, yet quickly relapsing into her own melancholic thoughts; with almost immovable and slightly unevenly dilated pupils; with incoherency and slowness of speech and complaining of constant, indefinite headaches; with a daily slightly rising temperature, an increased heart's action and a tremulous tongue; with syphilitic landmarks, telltale scars upon the legs, the chest and the back. With such a physical definition of congestion of the brain, with a history of an infection about three years previously by her husband, with a tendency to headache during the early stage of the disease and a previous attack of congestion of the brain some two years ago and a subsequent careful course of treatment by a competent physician during which time she was in good health and able to earn a livelihood, and now a relapse, what can prevent the probable inevitable trend to a fatal ending?

I believe that it is the experience of all of us under whose care the syphilitic falls that we may look with confidence for the cure of the patient, in so far as he or she may after a fixed number of years of well directed treatment safely marry and be the father or mother of healthy children. We know that syphilis like the other infectious diseases varies in its intensity and that not a few of the afflicted apparently recover if not treated at all: we judge from our experience that the large majority of intelligently and properly treated live to enjoy good health. Yet the records of our insane asylums show that proportionately the number of paretics is on the increase. With such records constantly before them medical super-

intendents of asylums view with awe our optimism. Are we wrong and they right? Do such a large number pass from our hands in apparently good health to be found later in life in the asylums?

While we recognize the value of the well directed, scientific treatment of the syphilitic, by such methods as in the judgment of his physician may seem best suited to his needs or best meets with the experience of the physician; and while we know that the patient who either by his own ignorance or indifference as to his habits, or who, because his condition has remained unrecognized, has failed to receive a properly directed treatment is more liable to develop the late syphilitic and parasyphilitic manifestations, is there in our properly handled cases anything more which can be done to prevent this fatal ending?

We well know that in the alcoholic, the debilitated; in him of unstable nervous system, whether acquired by inheritance or incurred by disease; in early youth and in him of advanced years, the influence of syphilis upon the arterial system and the nerve centers is more pronounced, and that this condition influences the nutrition of the brain, which malnutrition leads to degeneration and ultimately to mental deterioration and insanity. We all have observed that the negro and other dark races are less prone to syphilis of the nervous system: that this form is more prone among syphilitic men than among syphilitic women, probably on account of the former's addiction to drink and sexual excesses; that it occurs more frequently between the ages of 35 and 40, but that with advancing years the tendency becomes greater and the disease usually appears at a comparatively earlier date. But aside from these general observations there is nothing in the character of the initial sore, the early lesions, the earlier nervous symptoms which give a key to the future. While the neurotic or neuropathic patient may suffer more acutely from headache and neuralgia from the onset, he does not necessarily suffer from the later grave lesions of the brain. While judicious treatment may relieve the early nerve symptoms, it gives no guarantee of the absence of later brain lesions. While it is impressed in the reports of almost all superintendents of asylums that the cases of general paralysis of the insane usually give a history of the lack of well directed treatment or of no treatment at all, and that this lack is to their mind an important factor in the causation of the general paralysis, many thousands of cases after well directed treatment have found their way into our asylums.

By permission of the Superintendent of the Eastern Michigan

Asylum I quote from the advanced sheets of his report for the year ending June 30, 1908:

	Total admissions		paretics		percentage		average
To June 30, 1907	male-female		male-female		male-female		
	225—135	90	15	5	11.	5.15	8.9
To June 30, 1908							
	288—155	133	24	2	15.5	1.5	9.

Which condition represents fairly the percentage of paretics among the insane inmates. Yet it is difficult to get uniform reports, as so many circumstances, not infrequently local conditions, increase or diminish the relative proportions. Quoting from numerous sources from the reports filed in the library of the Surgeon General during the last 40 years, I find that the statistics of the Worcester Lunatic Hospital give for the years 1867-71 and the years 1891-96 the same percentage 5.5 to 5.6. Of the total number of admissions in the State Hospital system of New York State for thirteen years (1889-1901) of 49,787, there were 3307 paretics—6.6%. In a total of 330 admissions to the Taunton, Mass., State Hospital for the year 1905-06 there were 39 cases of paretics, over 11%. The 172 cases of general paralysis observed in the Connecticut Hospital for the Insane during a period of seven years (1898-1905) represented a yearly percentage of 5.4 to 7.8. In the Toronto Hospital for the year 1907 to the month of August the average was 6%. For the 12 years (1899-1901) the Kharkoff Zemskoi Hospital gives the following:

Total admissions			paretics			percentage		average
male-female			male-female			male-female		
4759	2331	(7090)	684	116	(800)	14.37	4.97	11.28

In other parts of Europe the figures give even a higher percentage, particularly in Berlin and Munich, in which cities the male paretics average 36% to 45% respectively; but this may be due in part to a relatively smaller percentage of other forms of psychoses.

It is generally recorded that the proportion of male to female

paretics averaged 1 to 7, due probably, as already stated, to important factors other than syphilis entering into the causation of general paralysis, as alcohol and sexual excesses. All reports, however, emphasize the strong influence of urban life upon the origin of dementia paralytica. Of the insane coming from the rural districts the paretics represent 1% to 2%, while in the urban centers the percentage reaches as high as 10% to 16% and even higher. The proneness to the development of general paralysis accredited to certain employments would seem to be due rather to the physical and moral condition of the patient than to his employment, especially to his addiction to excessive drinking and sexual excesses, but primarily to his having acquired syphilis. Neither the members of the learned professions, neither teachers, students, musicians, actors nor the members of any of the trades appear to be especially susceptible; nor does intellectual work, nor work of any kind, seem to predispose to paresis, when the health of such individual has not been undermined by hereditary influences or excesses.

Marked variations naturally exist in the estimation of recorders of the relative importance of syphilis in the causation of the numerous psychoses, for all are not equally quick to recognize the stigmata of syphilis; a fair estimation would be 5% to 12%. But no discussion of the etiology of dementia paralytica is ever entered into without the chief interest being centered in the relationship syphilis bears to its causation. Figures in which various observers have obtained a history of other evidence of syphilis vary from 1.6% (Voisin) to Kraepelin (Heidelberg) and Gudden (Charité) in men 34.4%; to Graf 44%; to Gudden in women 45.3%; Erb 52%; to 94% (Régis), while Tchisch and others go even so far as to state that in their opinion syphilis either hereditary or acquired ante-dates all cases of paresis and, I believe, this is the opinion of almost all Medical Superintendents of Asylums. Even those who do not go that far, who do not admit that there can be *no* dementia paralytica without syphilis give to syphilis the prepondering influence in its etiology. Thus Peterson has determined that antecedent syphilis is 7 to 10 times more prevalent in paresis than in other psychoses, and Kraepelin (Heidelberg) notes that syphilitics are 17 times more prone to paresis than non-syphilitics (Defendorf).

An examination by me at this writing of the history of 34 paretics at the Eastern Michigan Asylum shows: 14 give a positive history of syphilis, 3 a probable one, and in 17 the history is either negative and no history is obtainable, giving about 50% of paretics with a history of syphilis.

Winfield (Brooklyn) in reporting his observations made in the Long Island State Hospital for the Insane and other institutions (1906) in reference to evidences of syphilis among paretics, states that there were 241 paretics examined in the six hospitals visited. All were examined for external evidences of syphilis irrespective of any history of this disease, and it was found that 165 or 68.48% had various scars and markings that were typical of cutaneous syphilis, and 76 showed no external evidences whatsoever. In looking up the Hospital history of the paretics it was found, however, that 28 of the 76 negatives gave an undoubted history of syphilis. If these 28 are added to the 165 exhibiting evidences of syphilis, there are 193 out of 241, or about 80%, that had had syphilis, and there was nothing to prove that the negative minority had not had specific infection.

Between October, 1893, and March, 1897, 255 male and 57 female general paralytics were admitted to the Rainhill, Lancashire, Asylum. Of these, 76 males and 9 females were excluded from examination as no history was available. Of the remaining 179 males, 62% had certainly been infected with syphilis; in 24%, though no direct evidence was forthcoming, still sufficient data existed for declaring that they probably had the disease; and in 13% no history of syphilis could be elicited, but at the same time the disease could not be altogether excluded. Of the 48 females, 37% were certainly syphilitic, 60% had probably had the disease, and in 2% no evidence was forthcoming. (A. W. Campbell, *Brit. Med. Jour.*, Lond., 1899, v. 2, pp. 704-706.)

Undoubtedly syphilis and the vices, stresses and strains associated with civilization and defective heredity are the causes of tabes dorsalis and general paralysis of the insane. Of the contributing causes to this and to all psychoses are long-continued and severe brain strain or head injury, and above all alcohol in excess, entailing vascular and nervous changes in the cerebral cortex and leading to the production of degenerative changes of definite structural kind, especially in a nervous system unstable by inheritance or disease; changes leading to thickening and opacity of membranes, sclerotic lesions in vessels and fibrous tissues; but it is questionable if any of these factors in itself alone, excepting possibly defective heredity, ever produced dementia paralytica.

The lesions characteristic of the arterial changes and the gumma of late syphilis differ not only in their histological structure from the lesions which characterize tabes and general paralysis of the

insane, but also as to their developmental period after the primary infection and their behavior in regards to their response to anti-syphilitic remedies. It is the concensus of opinion that these remedies have no efficacy in the treatment of dementia paralytica. The developmental period of arterial and gummatous lesions, even of the nervous system, may be as early as the first year of syphilitic life, they attaining their maximum of development after the third year. Tabes and general paralysis seldom develop earlier than the 6th year, with a maximum period of frequency about the 15th year. Variations, however, are between the wide limits of 2 and 33 years.

"Dementia paralytica is a chronic progressive psychosis of middle life, characterized clinically by progressive mental deteriorations with symptoms of excitation of the central nervous system, leading to absolute dementia and paralysis, and pathologically by a fairly definite series of organic changes in the brain and spinal cord, probably the result of acute intoxication." (Defendorf.)

Its diagnosis is, however, often extremely difficult. Its distinction from brain syphilis, from nerve sclerosis, chronic alcoholic insanity with organic brain changes, cerebral tumors and brain sclerosis, from acute maniacal excitement of a functional character and depressive forms of manic-depressive insanity, from neuræsthenia, dementia præcox, senile dementia may be impossible in the early stages of the diseases until the correlation of the mental and physical signs give to it a clearly defined clinical picture, further supported, if necessary for diagnosis, by lumbar puncture.

In this paper it is not to the purpose, however, to go into the differential diagnosis or the various forms and clinical features of the disease. Yet we should be ready to recognize the "defective memory and attention, weakness of judgment, emotional indifference, change of moral character with greater pliancy in conduct, and the physical symptoms, of which defective pupillary reaction is the most active. . . . Defective speech with slurring, inability to arrange syllables and words in proper order, and tremor of facial muscles, are almost sure signs of the disease." (Defendorf.)

The majority regard general paralysis as a toxæmic degeneration, the result of the circulation within the system of syphilitic toxins, which produce profound disturbances of metabolism and induce anatomical changes. The initial point of attack of these toxins is by no means agreed upon, whether upon the nerve fibers, nerve cells or blood vessels.

Mœbius and others hold that both tabes and dementia paraly-

tica are late manifestations of syphilis, comparable to the gumma, but Fournier and others classify it among the parasyphilitic diseases, "the characters of which are that they do not exclusively or necessarily depend upon syphilis for their production, and that they are not influenced by antisyphilitic treatment."

Nageotte finds that the characteristic lesion in general paralysis of the insane is a cellular infiltration in the walls of the minute blood vessels and in the perivascular lymph spaces of the cerebral cortex. The cells are of various kinds—lymphocytes, plasma cells, and mast cells. The accumulation of plasma cells and of numerous lymphocytes in the walls of the minute blood vessels and in the perivascular lymph spaces of the cortex are a constant and characteristic feature in general paralysis. In his clinical lecture on the etiological relation of syphilis to tabes and general paralysis of the insane (1906, Clin. Stud. Edin., v. iv., pp. 97-118), Bramwell states that this perivascular infiltration of plasma cells belongs to the same class as the lesions which are certainly syphilitic. He (*ibid.*, pp. 137-149) views it, the lesion, as a chronic inflammation of the membrane and superficial layers of the cortex leading to sclerotic atrophy of the nervous tissues with an increase of the fibrous elements, neuroglial fibers and neuroglial cells. The walls of the minute blood vessels and the lymph spaces around the vessels are infiltrated with cellular elements.

Our laboratory workers have isolated a specific bacillus—the bacillus paralyticans—possessing morphological characters and staining affinities, which have led Robertson to apply to it the term "diphtheroid." It gains access to the system chiefly by way of the respiratory tract and the alimentary canal. This invasion of the blood, lymph and tissues gives rise to the production of toxins to which they claim the trophic, degenerative, convulsive and paralytic phenomena are due. It has been found by Robertson in bronchial, alimentary, genito-urinary mucous membranes, in the cerebrospinal fluid, in the brain, in the walls of the cerebral vessels; in the blood and in the urine. Langdon found it in the blood, cerebrospinal fluid, urine and urethral mucus of paretics in 3 out of 10 well marked clinically considered paretics out of 17 examined, and found it absent in the urine, pharyngeal and tonsillar mucus of healthy control individuals and of those of other psychoses (Langdon, 1906, *Am. J. Ins. Balt.*, v. 63, pp. 167-175). But Mott and others have failed to substantiate these findings.

No spirochetes have been found in any stage of the disease, and

this would accord with our present knowledge. Nor have Wassermann's serum tests given a reaction in cases of general paralysis of the insane positive enough for general application.

A careful review of the causes leading to the production of general paresis of the insane shows that the chief one is undoubtedly syphilis and that the problem for its control is very complex. The responsibility must rest with us who see the syphilitic in his early syphilitic life, for when he falls into the hands of the alienist, or enters the asylum, the damage is done, repair is impossible, and death within 2 to 6 years, or, if prolonged a life worse than death to his family and friends is certain. We should to my own mind extend in an appropriate manner a more general knowledge of syphilis to the public, should impress upon the syphilitic most emphatically the necessity of a carefully regulated treatment, and that he must carefully regulate his future life and habits so as to conserve his resources, and above all, avoid anything tending to irritate, to strain his nervous system. I think we all realize this, but perhaps most of us do not, as Fournier believes we should, extend mercurialization over a sufficiently long period of time.

Our hope may lie in the general theory of immunity characteristic of the exanthemata which applies equally to syphilis. The body defends itself by manufacturing specific anti-bodies with the aid of which the invading organism is repelled or the poisons elaborated by it are neutralized. To serum therapy, the production of specific anti-toxins in properly selected lower animals, or by the artificial cultivation and isolation of specific substances from the organism itself, it would seem that we might look for the solution. Wright's work with the opsonins and Vaughan's work with proteid residues make it a possibility that it is not unreasonable to hope that in the future a true specific treatment of syphilis may be discovered, which used in the early stages may minimize the injury to the nervous system and produce a cure before the injury is beyond repair. Again, the experimentation with the spirochæta pallida and the experimental inoculations with apes with syphilitic material may ultimately disclose the true cause or causes of general paralysis of the insane. This is our hope and to this we must bend our energy for a solution.

ANOTHER CASE OF HYPONOMODERMA (LARVA MIGRANS) DEMONSTRATING THE IMMEDIATE CURATIVE EFFECT OF CHLOROFORM INJECTED IN SITU.

By M. B. Hutchins, M. D., Atlanta, Ga.

THIS is the third case of this condition that I have seen. The two others were reported in the Journal of Cutaneous Diseases. The first was stopped with a second injection, the second case had a multitude of the larvæ and I had no opportunity of carrying out the treatment. In the last case, reported below, the larva was killed and the process checked immediately, with the one injection.

Methods of treatment advised by authors are "hit or miss," uncertain and experimental. The chloroform treatment is specific. A clean hypodermic syringe and needle are used. If the chloroform shows contamination from solution of "verdigris" in syringe, renew until clean. The needle point is pushed into burrow to supposed site of the larva, from behind. Two or three drops of chloroform are injected. There is a burning sensation that may last some hours, but the itching and discomfort from the larva cease immediately. No necrosis follows treatment, only a little serous exudation and finally some horny desquamation.

This last was the case of twelve years old boy (from middle Georgia), robust in physique. Had been out barefoot a few times before the beginning of the trouble. There was first a small blister behind head of first metatarsal bone in sole of left foot a week or two before. Up to the day before he came to me the condition had been that of two adjacent slightly ring-like loops or circles, but with enclosed areas of dried vesicular lesions, this part resembling a recovering pompholyx. A somewhat looped line slowly formed, reaching to midway of the sole, raised, a miniature of a mole borrow, middle line yellowish from serum, slopes of burrow pink, a distinct vesicle where larva made his flying start. In the past twenty hours it traveled obliquely toward head of 5th metatarsal, and at this point made an obtuse angle, turning toward crease under root of little toe for one-half inch. At the visible end of the burrow was a vesico-pustule, size of a small shot. (Traveled two inches in twenty hours.)

Treatment.—The contents of the above lesion were carefully removed on a fine pointed lancet, introduced under supposed site of larva. Microscopic examination revealed nothing but pus and epithelial cells.

Two or three drops of chloroform were injected in line of progress for one-fourth inch. A piece of zinc oxide adhesive plaster was applied to this region. Two days later the site of injection showed as a one-half inch long blind "tunnel" under the epidermis, exuding clear serum. The larva had stopped when the chloroform reached it. Nine days later horny desquamation was taking place here while slight irritation and oozing showed from later infection of mid-sole part of track, over which the patient had been, without instructions, wearing adhesive plaster. This soon ended and there was no further trouble.

BLASTOMYCOSIS CUTIS: REPORT OF TWO CASES.

By M. B. Hutchins, M. D., Atlanta, Ga.

THE locality of origin of the first of these cases and the fact that the second case occurred in a pure blooded negro seem to warrant their being placed on record. The report, briefly, follows:

Case I.—Blastomycosis. (No opportunity to get specimens.) Male, white, age 25. Farmer, from mountain region of Georgia. Disease began in middle of base of left lower lid about eight months before, first "a small lump," gradually extended. Used some irritating "home remedies." When examined, the parts affected were the outer end of left upper lid, external to canthus, the whole lower lid was ectropic, slightly on nose and ending on inner end of upper lid. Area crescentic, finely papillomatous, the edge sharply defined and "warty," one-eighth to one-fourth inch thick, some scale crusting, and points of dried blood from patient picking the lesion. No pus could be pressed from between papular lesions—all dry. At one time there was suppuration. Occasional pricking or itching sensations. General health fairly good. Treatment: Plain and wholesome food. Saturated solution potassium iodide, beginning with 10 drops t.i.d. after meals, increasing 3 drops daily, to tolerance or painful iodism of skin. Locally, Phenol 95% m.x.; Zinci Oxid., one ounce; Adipis, seven ounces. At the end of twenty-four days, patient wrote that he was over half well, and next communication, five months later, stated he was entirely well—the ectropion remaining. Last report in letter inquiring as to operation to relieve the ectropion.

Case II.—Blastomycosis. The patient was a negro man, aged 50 years, from South Carolina. First visit May 3, 1904. The disease began in left cheek five years before, healing in a year with a faint scar, after use of "some little salve." Appeared on the dorsum of left hand about the same time, got better along with cheek but did not entirely recover. Next, patch appeared on the left occiput almost healing in two or three months, but now on right edge and to the right a little papulo-pustulation and crusting—while the original site is occupied by a keloid about $1\frac{1}{4}$ x $1\frac{1}{4}$ inches. Disease began over right ramus of jaw about the time left cheek healed,

some points of healing now and then but rapid peripheral spreading. During the past winter the disease crossed the nose and occupied also the left suborbital region. Time of occurrence on right mastoid region not definitely stated.

Upon examination: Disease covers the right mastoid region, and occiput adjacent, and one-fourth inch of auricle at posterior superior attachment, and above and below the tragus. Extends nearly to the mid-frontal line and a little above the temple, the lower edge along border and angle of inferior maxilla, most of right cheek, upper outer one-half right upper lip, across nose, occupying all but edges of nostrils and lower part of left ala and left suborbit, ending in a rounded patch opposite left outer canthus. Ectropion right lids, the lower exposing an inch of conjunctiva. Forehead, temple, post-auricular, nose, suborbital, and lip disease more or less papillomatous—pinhead to pea-sized, but mid-temporal and mid-nasal show some whitish scarring and healing. Disease is more uniformly papular in smaller areas and on the hand. From right temple to angle and border of right jaw a three inch wide, red, raw, flatly papillomatous, exuberant granulation area devoid of epidermis, elevated $\frac{1}{8}$ inch. Has been wearing a vaselined cloth here.

Practically whole dorsum of left hand involved, as well as 3rd to 5th metacapo-phalangeal regions and first phalanx of ring finger, patches irregular in outline and papillomatous, crusts and some raw points. (Patient had been applying a mixture of kerosene oil and vaselin to hand.) Decomposition odor from diseased parts. Papules average small shot size, especially numerous in periphery—pus a marked feature under the crusts. (The late Dr. Robt. W. Hynds confirmed diagnosis with microscope.) The skin disease caused no gland involvement and but little impairment of health. The patient was instructed simply to keep the areas clean. No local medication was employed save a bland oil. Ten drops of a saturated solution of iodide of potassium were given three times a day after meals, rapidly pushing to 25 drops t.i.d. First evidence of healing was at posterior edge of right cheek. Raw area next on the hand. Iodic acne, especially of thighs, developed in few days but was disregarded as was the slight coryza. At the end of a week he was taking 30 drops t.i.d. There was steady yielding of the disease and in a little over two weeks the hand was almost recovered, leaving the skin smooth, pinkish, pigmentless Unfortunately the first photograph was not obtained until this time. He was held at 30 drops for about

PLATE XLVI—To Illustrate Dr. M. B. Hutchins' Article on Blastomycosis Cutis.

24 days, then ordered 35 t.i.d. which number was never exceeded. Iodide lesions of brief duration, but new appeared frequently. The papular lesions melted away under the treatment. Some fleshy, appleseed sized papular elevations, tabs, formed in healed areas, and some minute scar abscesses. Hand well in seven weeks, with some of the queer level abscesses and papillomata. Nose, suborbit, temple and post-auricular free except a few pustules. These seemed secondary, were not over pinhead size, were level with skin, epidermic. The granulation area of right cheek healed steadily but slowly. He gradually became accustomed to the iodide until the acne gave little trouble. With a dressing of subnitrate of bismuth the right raw area healed more rapidly.

June 27th, 56 days from beginning of treatment, the active disease had disappeared. At the end of two months the patient went home free of disease. Recovered areas showed more or less of pigment and a few of the " flesh tabs," considerable scaling of the hand area. No actual scarring in any part. The raw surface on right cheek reduced to a patch, smooth, soft, shining, $\frac{1}{2}$ x $\frac{3}{4}$ inch at upper end, then an isthmus of healing, and below a one inch patch. The potassium iodide was continued for some time at 20 drops t.i.d. The last photograph was sent me from his home three months later at which time Dr. C. M. Walker of Westminster, S. C., wrote me that the man was well, all but the ectropion. Eighteen months later Dr. Walker wrote that the patient had had some relapses, having taken his treatment very irregularly. This case was considered a cure, but the man being an ignorant colored laborer could not be controlled, and had some recurrence which a further use of the iodides would have prevented.

SOCIETY TRANSACTIONS.

MANHATTAN DERMATOLOGICAL SOCIETY.

66th Regular Meeting, February 7, 1908.

Dr. A. Bleiman, Chairman.

Chancre of the Lower Lip. By Dr. E. L. Cocks.

Robert R., aged twenty-three years, American, single, and by occupation a brakeman. Patient states that he was in the habit of using the drinking glass in the passenger coach on which he worked. On December 25, 1907, he noticed what he considered a "cold sore." Did not pain him much, but kept on increasing in size. January 25, 1908, the "sore" had become quite large, somewhat painful and swellings appeared under the tongue, which were also painful.

Examination at that time. A typical primary selerosis with local adenopathy was found. On February 2, 1908, a faint macular eruption appeared. The patient has had four injections of salicylate of mercury and the lesion and eruption are fading.

Pityriasis Rosea limited to pelvic region. By Dr. E. L. Cocks.

Mrs. B., aged twenty-one years, American. Present condition was first noticed by patient three weeks ago, and was diagnosed by her as "syphilis." Before the eruption appeared patient was troubled with nausea and flatulency. These have continued and are still present. With the appearance of the lesions pruritus set in. This causes the patient a great deal of annoyance and interferes with her sleep.

Examination. Some of the lesions are small, others large; they are irregular, with slightly raised borders and colored centers. The larger lesions on the lips have some scales, and are somewhat more circular in outline. The entire condition is beginning to show some tendency to advance upwards.

Lupus Erythematosus of the face showing beneficial results from Finsen therapy. By Dr. L. Weiss.

Miss Y. S., aged twenty years, Russian. At the age of thirteen, a small nodule appeared on the right cheek; soon the surrounding skin became erythematous and very scaly, extending to the left involving the nose and left cheek, to the right involving the entire cheek and the right ear. The left ear and the upper lips soon became involved. The affected

areas were always red and scaly. Was treated for one year in St. Petersburg, and then went to Warsaw, where, for one year was treated with salves, plasters and the Paquelin cautery. The results not being very satisfactory, she returned to St. Petersburg. No treatment for one year. Later patient went to Vienna where after a preliminary course of treatment with salves and plasters, she was exposed to the Finsen light. This lasted for two years, consisting of daily exposures of from two to four hours and occasionally twice daily.

At present three active lesions are seen. One on the left cheek, about the size of a silver dollar, still very red and scaly. A much smaller one on right side of the nose and a third one just behind the right ear. Other parts of the face show typical parchment like scarring. The ultimate result obtained with Finsen light in this case, is much better than we are accustomed to see by the use of pastes, plaster caustics or radiotherapy. The scar tissue here present may be due to the use of carbolic acid and cautery; it is a very difficult matter to decide as the patient is not very clear about the matter.

Keratoma Hereditarium Plantare et Palmare. (Two cases.) Dr. W. S. Gottheil.

Josephine C., aged twelve years, of Italian parentage. Healthy child; abnormality first noticed when about one year old. Palms and soles are the seat of a uniform, diffuse thickening of the epidermis, so that both regions are of a dark yellow or lemon color in daylight, instead of the normal pinkish. In the midst of these thickenings, careful pressure reveals the presence of a number of deep seated apparently hyperkeratotic nodules. There are a number of scratches and one or two rhagades on the palms. The mother states that the child very frequently injures her palms accidentally. On the palmar surface of the fingers there is a permanent tendency to desquamation. The nails are all incurved and thickened. On the backs of the hands, over the knuckles and limited to this area, are groups of what are apparently soft warts. There is no other abnormality of the skin or other organs.

Milly C., sister of Josephine, presents precisely similar lesions, the thickenings of the epidermis of the palms and soles, the thickening and incurvation of the nails, and the groups of warts over the knuckles; but these abnormalities are less marked than in her sister's case. Here also the deformities were noticed very early in life. Neither the mother nor the aunt, the only relatives seen by the presenter, present any similar deformities. These cases are undoubtedly congenital, and increase with age, as is shown by the difference in the severity of the two cases; at birth it was probably so slight as to be unnoticed.

Bromoderma Verrucosum. Dr. W. S. Gottheil.

Isaac S., aged twenty-six years, Russian. Has been an epileptic since childhood. Has been taking bromides for the last two years, and has suffered from his present eruption for the last five months. Commencing as a small spot on the leg, it has steadily increased in size, and new lesions have appeared in its vicinity. No subjective sensations. The patient was admitted to Lebanon Hospital, February 10, and stayed there three weeks. During that time there were absolutely no epileptic manifestations. No bromides were given, no new lesions developed, though there was a slow increase in size of those already present. The patient finally left the hospital because he was dissatisfied at not getting bromides. For the purpose of watching the spontaneous development of the lesions the local treatment was confined to the use of boric acid ointment.

All the lesions were on the inner aspect of the right leg, middle third. The first that had appeared was the largest, and was almost an perfectly round plaque two inches in diameter. The margins were purplish red, moderately indurated and raised; the tumor itself markedly verrucous; its entire surface being covered with papillary excrescences. At the margins, where the papillæ were higher and drier, they were brownish and glistening; in the slightly depressed center of the mass, however, they are less marked and regular, and distinctly pinkish in color. Just above and slightly anterior to this largest lesion is another precisely similar one, one inch in length and one-half inch in breadth. Anterior to this, over the shin, are two elongated lesions less markedly verrucous and evidently younger than the first ones. Posteriorly, over and above the Tendo Achilles, are several papulo-tubercular lesions, hardly verrucous at all. The rest of the body is clear and there is no reason for the unilateral appearance of the lesions in this case.

M. B. Parounagian, M. D.,
Secretary.

MANHATTAN DERMATOLOGICAL SOCIETY.

67th Meeting, March 6, 1908.

Dr. Bleiman, Presiding.

Epithelioma of Lip and Rodent Ulcer of Cheek. Dr. E. L. Cocks.

R. W., aged sixty-seven years, school-teacher, American, non-alcoholic, does not smoke. No history of syphilis. Two years a small painless pimple appeared on the lower lip to the right of the median line, and gradually spread. At the present time the swelling involves the entire lower lip. In the center of the mass is an exulcerated area, with in-

durated margins and an angry looking base. Is not tender. The sublingual glands are not enlarged.

On the right cheek just over the site of the salivary glands is a dime-sized, ulcerated area. The glanulations are exuberant, bleed upon the slightest irritation, the edges are eroded. This growth appeared several months before the one on the lip.

Lepra Tuberosa. Dr. A. C. Geyser.

Mr. X., aged twenty-two years, native of the British West Indies. Four years ago patient noticed nodules of various sizes appear on the skin. The size was from that of a small pea to a fair size walnut. These appeared scattered all over the body. Some spread, others remained stationary. Two years ago he came to this country and consulted a physician who treated him for syphilis. There was no improvement, to the contrary the lesions became more numerous. About one year ago a sore appeared on the sheath of the penis and was at that time diagnosed as a chancre. No other manifestations appeared. The many varied sized nodules are now present on the thighs, arms, back and face and forehead. Has anæsthetic areas on the anterior surfaces of the thighs. The ulnar nerve shows decided thickening. Dr. Geyser in presenting the case called attention to the fact the leprosy was present a number of years before the so-called syphilitic infection took place and doubts the diagnosis of syphilis.

Lichen Planus et Verruca Planum, co-existing in the same case. Dr. M. B. Parounagian.

Mrs. E. W., aged fifty-seven years, family and previous personal history is negative. The warts have been present for the last twenty years. Three years ago the present condition began in the form of an itchy eruption. During that time the subjective symptoms had subsided, but at present the itching is so intense that she comes to the dispensary for relief.

In the cubital fossæ, on the extensor surfaces of both forearms, on dorsum of the hands, are scattered many papules, small, angular to polygonal, violaceous to purplish in color, with flat and shiny tops. On the inner aspect of the left thigh and at the instep of the left foot are a number of similar lesions. All the lesions are very itchy. Scattered in amongst these are a number of flat, round, non-inflammatory papules, which as before mentioned have been present for many years.

Dr. Geyser suggested the use of the X-ray in this case, especially upon the lesion on the lip. He considers surgical intervention contra-indicated on account of the great mass o ftissue that would have to be removed. The cosmetic results would be far superior to that obtained surgically and the prognosis as far as life is concerned would be about the same.

Erythema Induratum Scrophulosorum. (Erytheme indure Bazin.) Dr. Edw. Pisko.

Kate L., aged eighteen years, American, by occupation a clerk. Family and previous personal history negative. Last spring patient had some deep seated pains in the legs, soon followed by deep seated lumps, which in a short time appeared on the surface and left scars. Eruption lasted four months. This spring (about four weeks ago) had a number of painful spots which in a few days were the site of deep-seated lumps. These lumps appeared on the surface in about ten days and have been present since.

On the extensor surface about the middle third of both legs are numerous scars and recent lesions. The scars (so the patient states) are present from the attack of last spring. The recent ones are pea-sized, some elevated, others deep seated, nodules, varying in color from bright red to brown, the redness shading off into the surrounding normal tissues. None of the lesions shows any active ulceration.

Circinate Syphilide in a colored woman. Dr. E. L. Cocks.

Mrs. P., aged thirty-three years, married twice. One child by her first husband. Never had any miscarriages. Married to second husband for last seven years. Has not been pregnant since. On January 20, 1908, noticed a sore on the right labium majus. Came to Harlem Dispensary on January 30, 1908, complaining of severe headache and pains in her bones. A general adenopathy was present. The entire cutaneous surface is covered with a small sized circinate syphilide. The papules forming the rings are raised about 2 mm. On account of the color of the patient the interpapillary erythema cannot be seen. The papules themselves are slightly pinkish in color, the center being very much darker than the surrounding normal area, making a very striking picture. Under the injections the lesions are rapidly retrogressing.

M. B. Parounagian, M. D.,
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ERRATUM.

October Number.—Page 453, sixteenth line read "speculum" instead of "spectrum."

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